

CLAIMS

1. A cellulase preparation consisting essentially of a homogenous endoglucanase component which is immunoreactive with an antibody raised against a highly purified ~43 kD endoglucanase derived from Humicola insolens, DSM 1800, or which is homologous to said ~43 kD endoglucanase.
2. A cellulase preparation according to claim 1, wherein the endoglucanase component has an endoglucanase activity of at least 50 CMC-endoase units/mg of protein.
3. A cellulase preparation according to claim 2, wherein the endoglucanase component has an endoglucanase activity of at least 60 CMC-endoase units/mg of total protein, in particular at least 90 CMC-endoase units/mg of total protein, and preferably at least 100 CMC-endoase units/mg of total protein.
4. A cellulase preparation according to claim 1, wherein the endoglucanase component has essentially no cellobiohydrolase activity.
5. A cellulase preparation according to any of claims 1-4, wherein the endoglucanase component has an isoelectric point of about 5.1.
6. An enzyme exhibiting endoglucanase activity, which enzyme has the amino acid sequence shown in the appended Sequence Listing ID#2, or a homologue thereof exhibiting endoglucanase activity.
7. An endoglucanase enzyme according to claim 6 which is producible by a species of Humicola, e.g. Humicola insolens.
8. An enzyme exhibiting endoglucanase activity, which enzyme has the amino acid sequence shown in the appended Sequence Listing ID#4, or a homologue thereof exhibiting endoglucanase activity.
9. An endoglucanase enzyme according to claim 8 which is producible by a species of Fusarium, e.g. Fusarium oxysporum.
10. A DNA construct comprising a DNA sequence encoding an endoglucanase enzyme as claimed in any of claims 6-9.

11. A DNA construct according to claim 10, wherein the DNA sequence is as shown in the appended Sequence Listings ID#1 or ID#3, or a modification thereof.
12. An expression vector which carries an inserted DNA sequence according to claim 10 or 11.
13. A cell which is transformed with a DNA construct according to claim 10 or 11 or with an expression vector according to claim 12.
14. A cell according to claim 13 which is a fungal cell, 10 e.g. belonging to a strain of Trichoderma or Aspergillus, in particular Aspergillus oryzae or Aspergillus niger, or a yeast cell, e.g. belonging to a strain of Hansenula or Saccharomyces, e.g. Saccharomyces cerevisiae.
15. A process for producing an endoglucanase enzyme as 15 defined in any of claims 6-9, the process comprising culturing a cell according to claim 13 or 14 in a suitable culture medium under conditions permitting the expression of the endoglucanase enzyme, and recovering the endoglucanase enzyme from the culture.
- 20 16. A detergent additive containing a cellulase preparation according to any of claims 1-5 or an endoglucanase enzyme according to any of claims 6-9, preferably in the form of a non-dusting granulate, stabilized liquid or protected enzyme.
- 25 17. A detergent additive according to claim 16 which contains 1-500, preferably 5-250, most preferably 10-100, mg of enzyme protein per gram of the additive.
18. A detergent additive according to claim 16 which additionally comprises another enzyme such as a protease, li- 30 pase, peroxidase and/or amylase.
19. A detergent additive according to claim 18, wherein the protease is one which has a higher degree of specificity than Bacillus lentinus serine protease.
20. A detergent additive according to claim 19, wherein 35 the protease is subtilisin Novo or a variant thereof, a protease derivable from Nocardia dassonvillei NRRL 18133, a serine protease specific for glutamic and aspartic acid,

producible by Bacillus licheniformis, or a trypsin-like protease producible by Fusarium sp. DSM 2672.

21. A detergent composition comprising a cellulase preparation according to any of claims 1-5 or an endoglucanase 5 enzyme according to any of claims 6-9.

22. A detergent composition according to claim 21, which additionally comprises another enzyme such as a protease, lipase, peroxidase and/or amylase.

23. A detergent composition according to claim 22, 10 wherein the protease is one which has a higher degree of specificity than Bacillus lentinus serine protease.

24. A detergent composition according to claim 23, 15 wherein the protease is subtilisin Novo or a variant thereof, a protease derivable from Nocardia dassonvillei NRRL 18133, a serine protease specific for glutamic and aspartic acid, 20 producible by Bacillus licheniformis, or a trypsin-like protease producible by Fusarium sp. DSM 2672.

25. A detergent composition according to claim 21, 25 wherein the cellulase preparation or endoglucanase enzyme is present in a concentration corresponding to 0.01-100, preferably 0.05-60, and most preferably 0.1-20, mg of enzyme protein per liter washing solution.

26. A detergent composition comprising a detergent additive according to any of claims 16-20.

27. A method of reducing the rate at which cellulose-containing fabrics become harsh or of reducing the harshness of cellulose-containing fabrics, the method comprising treating cellulose-containing fabrics with a cellulase preparation according to any of claims 1-5 or an endoglucanase enzyme 30 according to any of claims 6-9.

28. A method of providing colour clarification of coloured cellulose-containing fabrics, the method comprising treating coloured cotton-containing fabrics with a cellulase preparation according to any of claims 1-5 or an endoglucanase 35 enzyme according to any of claims 6-9.

29. A method of providing a localized variation in colour of coloured cellulose-containing fabrics, the method comprising treating coloured cotton-containing fabrics with a cellulase preparation according to any of claims 1-5 or an endoglucanase enzyme according to any of claims 6-9.

30. A method according to any of claims 27, 28 or 29, wherein the treatment of the fabrics with the cellulase preparation is carried out during soaking, washing or rinsing of the fabrics.

10 31. A method of improving the drainage properties of pulp, the method comprising treating paper pulp with a cellulase preparation according to any of claims 1-5 or an endoglucanase enzyme according to any of claims 6-9.

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